Calsim-III Project

(as of 9-1-04)

Task

A. Create Hydrology Development Group

1. Form hydrology development group
2. Develop Implementation Plan
3. Define roles, sources of funding, tasks, etc
4. Schedule regular meetings

B. Define Water Mangement Areas

1. Define Water Management Areas for the Sacramento Valley
2. Define Water Management Areas for the San Joaquin Valley
3. Define different demand types in WMAs (contractor type, supply source)
4. Define project and non-project water users

C. Develop Calsim III Network Schematic

1. Identify key existing arcs and nodes to be retained
2. Identify new arcs and nodes required for operational logic
3. Develop new network schematic in AutoCad
4. Develop new network schematic in ArcGIS

D. Compute Water Demands

1. Develop Agricultural Demands
2. Develop Urban Demands
3. Develop Wildlife Refuge Demands
4. Dynamic Variation of Demand with Supply

E. Develop Valley Floor Accretions

1. Mass balance (depletion) approach
2. Evaluate Rainfall-Runoff Approach
3. Finalize procedure and apply

F. Develop Water Budgets

1. Define water routing within WMA (efficiencies, reuse, conveyance losses, spills)
2. Sacramento Valley
3. San Joaquin Valley

G. Develop and Calibrate CVGSM2

1. **Complete calibration of current CVGSM2**
2. **Compare to CVGSM**

H. Develop and Calibrate CVGSM3

1. **Modify finite element configuration to match Calsim III WMAs**
2. **Modify stream network, diversion & return flow location to match Calsim III**
3. **Resolve potential discrepancies between CVGSM and Calsim III**
4. **Prepare CVGSM3 input data files for historical (calibration) run**
5. **Calibrate CVGSM3 and compare to CVGSM2**
6. **Develop CVGSM3 run at projected level of development**

I. Develop Groundwater Response Functions

1. **Develop methodology**
2. **Develop software for estimating response functions**
3. **Develop response functions**

J. Miscellaneous

1. **Correct calculation of Net Delta Outflow (D1485 and D1641 definitions)**
2. **Others**

K. Complete Calsim III WRESL Coding

1. **Develop modular approach for modeling WMAs**
2. **Develop system files (connectivity etc..)**
3. **Routing of water to/through WMAs**
4. **Revise project operations logic**
5. **Calculation of stream-aquifer interaction**

L. Complete hydrology and model development for rim stations

1. **Sub-basins not modeled dynamically**
2. **Sub-basins modeled dynamically (modular)**

M. Integrate with other Calsim III Developments (as needed)

1. **San Joaquin River water quality**
2. **CAM allocation model**
3. **Representation of irrigation season and critical month specified in contracts**
4. **Climate change scenarios**
5. **Water Transfers**
6. **Others**

N. Complete Calsim III Validation

1. Develop historical input data
2. Collect additional flow and storage data as required
3. Simulate 1995-2003 period
4. Review results
5. Revise input and operational logic as required

O. Compare Calsim-II and Calsim-III

P. Complete Calsim III Benchmark Study(s)

1. Existing Conditions
2. Future No Action
3. Future Cumulative Condition

Q. Extend unimpaired flow data through 2003

R. Hydrology Documentation

S. Public Release of Calsim-III

1. Public Meeting
2. Public Workshop